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| 09/803,829      | 03/12/2001  | G. Frederick Hutter  | CHR 01-34           | 9980             |

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EXAMINER

DICUS, TAMRA

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 07/18/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/803,829

Applicant(s)

HUTTER ET AL.

Examiner

Tamra L. Dicus

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 March 2001 (IDS).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by 5,521,229 to Lu et al.

Lu teaches a polymer composite comprising the polymerization product prepared from a microemulsion (colloidal dispersion) comprising free-radically ethylenically unsaturated polar monomers. Lu teaches several types of such monomers that are amine-containing where a mixture comprises about 2 to about 40 percent by water, where the solids content is about 25 up to 50 percent as per applicant claims (see further detail below).

The first type is a water-soluble free-radically copolymerizable ethylenically unsaturated polar monomer having a range of 2 to 60 weight percent which is included in applicant's claimed range of 1 up to 8 and up to about 25 percent by weight. Where such monomer may be nonionic, e.g., acrylamide, or may be ionic (cationic or anionic). Mixtures of nonionic and ionic monomers may be used. Ionic monomers conforming to these criteria are selected from the group consisting of sodium styrene sulfonate, potassium acrylate, sodium acrylate, sodium methacrylate, ammonium acrylate, sodium 2-acrylamido-2-methylpropane sulfonate, 4,4,9-

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trimethyl-4-azonia-7-oxa-dec-9-ene-1-sulfonate, N,N-dimethyl-N-(beta-methacryloxyethyl)ammonium propionate betaine, trimethylamine methacrylamide, 1,1-dimethyl-1-(2,3-dihydroxypropyl)amine methacrylamide, and other zwitterionic ethylenically - unsaturated monomers having the requisite solubility requirements, and mixtures thereof.

The second type contains 2 to 60 weight percent of ethylenically -unsaturated free-radically copolymerizable monomers and selected from the group consisting of N-vinylpyrrolidone, N-vinylcaprolactam, methacrylic acid, hydroxyethyl methacrylate, styrene sulfonic acid, N-substituted acrylamides, N,N-disubstituted acrylamides, N, N-dimethylaminoethyl methacrylate, 2-acrylamido-2-methyl propane sulfonic acid, and mixtures thereof, which is included in applicant's claimed range of 1 to 25 and up to and including 50 percent by weight. Lu explains the most-preferred monomers include those selected from the group consisting of acrylic acid, N-vinylpyrrolidone, N-vinylcaprolactam, N,N-dimethylacrylamide, and mixtures thereof, because of the favorable properties, such as physical strength, that they can impart to the polymer composite.

Lu further teaches the addition of a nonionic or ionic (cationic or anionic) surfactants of 5 to 70 weight percent in the same range as applicant.

Lu teaches further comprising 0.01 to about 5 percent by weight of polymerization initiator of either photo or thermal type, which suffices applicant's claimed catalytic amount. See col. 1, line 23, col. 3, lines 30-60, col. 8, lines 5-62, and col. 9, lines 46-47.

Lu discloses the claimed invention and although he teaches additives such as pH adjusters at col. 10, line 10, Lu does not expressly disclose adjusting an emulsion polymerization product to a pH range of about 3.5 up to 7.0. Additionally, Lu teaches the same materials as

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applicant and therefore the pH range of 3.5 to 7.0 would be expected to be the same (see col. 8, lines 47-51, col. 9, lines 17-19, and at col. 10, line 10). However, patentability resides in the product, the process notwithstanding. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps (see MPEP 2113). Furthermore, the invention defined by a product-by-process invention is a product NOT a process. *In re Bridgeford*, 357 F. 2d 679. It is the patentability of the product claimed and NOT of the recited process steps which must be established. *In re Brown*, 459 F. 2d 531.

Regarding claims 4 and 5, since Lu teaches the same ethylenically unsaturated monomers as mentioned above, and at col. 15, lines 60-col. 16, line 25, teaches the use of cationic surfactants selected from the group consisting of quaternary ammonium salts in which a higher molecular weight substituent(s) on the nitrogen is/are often (a) higher alkyl group(s), containing about 10 to about 20 carbon atoms, and the lower molecular weight substituents may be lower alkyl of about 1 to about 4 carbon atoms, such as methyl or ethyl. Lu further explains in some instances the groups may be substituted with hydroxy. The specific examples of Lu use quaternary ammonium halide surfactants selected from the group consisting of methylbis(2-hydroxyethyl)coco-ammonium chloride or oleyl-ammonium chloride, and methyl polyoxyethylene (15) octadecyl ammonium chloride where one or more of the substituents may include an aryl moiety or may be replaced by an aryl, such as benzyl or phenyl. It would be inherent in the polymer composition of Lu to produce vinylbenzyltrimethylammonium chloride, methacrylamidopropyltrimethylammonium chloride, or combinations thereof since Lu teaches the options as discussed with the same components in the polymeric composition in the

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combinations of Lu above, although Lu does not explicitly mention applicant's specific combination.

3. Regarding claim 6, Lu teaches optionally further comprising a chain transfer agent.

Examples of chain transfer agents Lu uses are selected from the group consisting of carbon tetrabromide, alcohols, mercaptans, and mixtures thereof, comprising up to about 75 percent by weight of a chain transfer agent of the mixture, meeting applicant's requirements of up to 4 percent. See col. 12, lines 30-50.

4. Regarding claim 7, Lu teaches examples of nonionic block copolymer trademarked surfactants that include ethylene oxide-propylene oxide block copolymers and oxyethylene fatty acid esters at col. 14, lines 10-25.

5. Regarding claim 8, at col. 15, line 60, Lu uses quaternary ammonium salts as cationic surfactants. Lu continues to describe where at least one higher molecular weight group up to three lower molecular weight groups are linked to a common nitrogen atom to produce a cation using from 1 to about 20 carbon atoms at col. 16, lines 1-25, meeting applicant's claimed a range of 8 to 22 carbon atoms. Alkyltrimethylammonium and alkylpyridinium salts are and are derived from quaternary ammonium salts. At col. 15, lines 64-66, Lu further describes using an anion selected from the group consisting of a halide (bromide, chloride, etc.) and an alkosulfate (methosulfate). No patentable distinctions are seen.

6. Regarding claims 9- 10, at col. 12, lines 14-25, Lu teaches thermal initiator benzoyl peroxide and azobisisobutyronitrile and mixtures thereof comprising 0 to 5 percent by weight, meeting applicant's claimed range of 0.1 to 3 percent by weight.

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7. Regarding claim 11, Lu teaches the same redox initiators at col. 9, lines 40-58. Suitable oxidation-reduction initiators are used, where the reducing agents are selected from the group consisting of sodium metabisulfite and sodium bisulfite; and 4,4'-azobis(4-cyanopentanoic acid) and its soluble salts (e.g., sodium, potassium).

8. Regarding claim 12, the recitation of the polymerization product being adjusted via the addition of an acid is a process limitation and does not constitute a limitation in any patentable sense. Patentability resides in the product, process notwithstanding. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. Patentability of an article depends on the article itself and not the method used to produce it (see MPEP 2113). Furthermore, the invention defined by a product-by-process invention is a product NOT a process. *In re Bridgeford*, 357 F. 2d 679. It is the patentability of the product claimed and NOT of the recited process steps which must be established. *In re Brown*, 459 F. 2d 531.

However, since Lu teaches the same water-soluble acids as applicant uses at col. 8, lines 47-51, col. 9, lines 17-19, and at col. 10, line 10 describes such aforementioned initiator additives as pH adjusters, the pH of the polymeric product is an inherent characteristic. No patentable distinctions are seen.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1 and 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over 5,521,229 to Lu et al., as applied to claim 1 above, and further in view of 5,372,884 to Abe et al.

Lu teaches the claimed invention except for expressly an ink jet receptive coating disclosing:

1. including acetic, propionic, glycolic, or lactic acids,
2. a pigment, and
3. a substrate of paper, plastic, wood, etc.

Abe teaches an ink jet receptive coating comprising the same additives such as fatty acids or metal salts of fatty acids, silica, acetic acid, pH controlling agents such as sulfuric acid, color pigments, and a support (substrate) of paper, pulp, resin films (plastic), disclosing the option of having at least one side coated on the support (see col. 5, lines 1-65).

It would have been obvious to one of ordinary skill in the art to modify the polymeric composition of Lu to include:

1. the acids of claim 13 because Abe teaches at col. 3, lines 2-5 a cation-modified non-spherical colloidal silica suspension containing acid components such as acetic acid, citric acid, sulfuric acid and phosphoric acid for colloid stabilization advantages.
2. ethylene and acrylic acid, pigments such as clay, kaolin, talc, barium sulfate, pH regulators, and coloring pigments as taught by Abe at col. 6, lines 15-24 to produce a resin-coated paper exhibiting various characteristics such as a



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gloss, water resistance, film and drying properties (see further col. 7, lines 15-65, and Example 1).

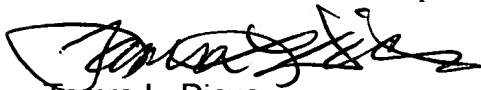
The limitations of claims 1, and 13-18 are met under 35 U.S.C. 103.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is (703) 305-3809. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

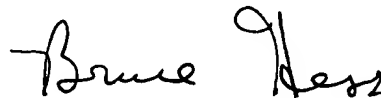
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8329 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Tamra L. Dicus  
Examiner  
Art Unit 1774

July 14, 2002



BRUCE H. HESS  
PRIMARY EXAMINER